

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group III in the reply filed on 8/11/08 is acknowledged. The traversal is on the ground(s) that there would not be serious burden to examine the entire application. This is not found persuasive because, as noted in Section 2 of the Office Action dated 7/9/08, each of the groups has special technical features not found in the other groups.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected Groups I-II, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 8/11/08.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Response to Amendment

4. The Preliminary Amendments to the claims and specification, in the submission dated 8/3/06, are acknowledged and accepted.

Drawings

5. The drawings were received on 8/3/06. These drawings are acceptable.

Specification

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

7. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

Claim Objections

8. Claims 13, 17 and 18 are objected to because of the following informalities: each claim recites the limitation "the beam splitter." There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 9-12 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Meyrueis et al. (WO 03/091995 A1).

Consider claim 9, Meyrueis et al. teach (e.g. figures 3A-4) a holographic recording medium in which information is recorded by a diffraction grating formed in a

recording layer (103, recording medium) in the vicinity of an intersection point between an incident optical axis of a reference beam (110, reference beam) and an incident optical axis of an object beam (120_1 - 120_N , object beams) projecting the reference beam and the object beam thereonto, wherein the diffraction gratings are recorded by deflection multiplex recording so that a plurality of diffracted light beams (430_1 - 430_N , modulated beams) generates in different directions when a reproduction reference beam (410, reference beam) is applied at an incident angle of the incident optical axis of the reference beam at the time of recording [pg. 10, line 12 to pg. 13, line 16].

Consider claim 10, Meyrueis et al. teach (e.g. figure 3A) a holographic recording medium wherein a direction in the optical axial plane and perpendicular to an optical axial plane including the incident optical axes of the reference beam (110, reference beam) and the object beam (120, object beam) and also passing through the intersection point represents a Y axis, a direction approximately perpendicular to the recording layer represents a Z axis, and a direction perpendicular to the Y axis and the Z axis represents an X axis, the diffraction gratings recorded by the deflection multiplex recording are in positions successively shifted in the X and Y directions (via, XY moving system not shown) [pg. 10, lines 12-25, pg. 11, lines 1-3].

Consider claim 11, Meyrueis et al. teach (e.g. figures 3A-4) a holographic recording medium wherein the recording layer is partitioned into a plurality of hologram blocks (packets) in the X axial direction and the Y axial direction, and in each of the hologram blocks (packets), the diffraction gratings are recorded by the deflection

multiplex recording are in positions successively shifted in the X and Y directions [pg. 10, line 12 to pg. 13, line 16].

Consider claims 12 and 15-16, Meyrueis et al. teach (e.g. figures 3A-4) a method for reproducing a holographic memory comprising the steps of: projecting a reproduction reference beam (410, reference beam) onto the holographic recording medium (103, recording medium) at an incident angle of an incident optical axis of a reference beam at the time of recording, and allowing imaging devices (405_{1-N}, CCD cameras) to individually receive a plurality of generating diffracted light beams to reproduce a plurality of signals at the same time [pg. 10, line 12 to pg. 13, line 16].

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 13-14, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyrueis et al. (WO 03/091995 A1) in view of Yamaji et al. (6,088,321).

Consider claims 13, 17 and 18, Meyrueis et al. disclose (e.g. figures 3A-4) a holographic memory reproducing apparatus comprising: a stage for supporting the holographic recording medium, a laser light source (101/401, laser source); and a reproduction reference optical system for guiding a reproduction reference beam being

a laser beam (110/410, reference beam) from the laser light source into the holographic medium (103, recording medium) at an incident angle of an incident optical axis of the reference beam, wherein the reference optical system comprises: a plurality of imaging devices (405_{1-N}, CCD cameras) provided corresponding to a plurality of diffracted light beams (430_{1-430_N}, modulated beams) generating from the holographic recording medium by projecting the reproduction reference beam, for receiving the corresponding diffracted light and reproducing signals [pg. 10, line 12 to pg. 13, line 16]. However, Meyrueis et al. do not disclose a rotating mirror for selectively reflecting the reference beam from the direction of the beam splitter into a plurality of different optical path directions or a lens group for guiding the reproduction reference beam to an intersection point with the object beam in the vicinity of the holographic guiding medium via the incident optical axes of the reference beam. Meyrueis et al. and Yamaji et al. are related as holographic recording and reproducing devices. Yamaji et al. teaches (e.g. figure 1) a rotating mirror (12, pager mirror) for selectively reflecting the reference beam from the direction of the beam splitter (3, translucent mirror) into a plurality of different optical path directions and a lens group (11, light beam expander) for guiding the reproduction reference beam to an intersection point with the object beam in the vicinity of the holographic guiding medium via the incident optical axes of the reference beam [col. 7, lines 27-43]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Meyrueis et al., as taught by Yamaji et al., in order to increase recording storage capacity, enhance focus and to easily adjust/tune the reference beam to reproduce a desired object.

Consider claims 14, 19 and 20, the modified Meyrueis et al. reference discloses (e.g. figure 3A of Meyrueis et al.) a holographic memory reproducing apparatus wherein the stage (not labeled, XY moving system) is a translational stage for supporting the holographic medium (103, recording medium) so as to shift in an X axial direction and a Y axial direction, when a direction in the optical axial plane and approximately perpendicular to a recording layer of the holographic recording medium represents a Z axis and a direction perpendicular to the Y axis and the Z axis represents an X axis [pg. 10, lines 12-25 and pg. 11, lines 1-3 of Meyrueis et al.].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JADE CALLAWAY whose telephone number is (571)272-8199. The examiner can normally be reached on Monday to Friday 7:00 am - 4:30 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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